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Design of airfoils providing the absence of separation in a compressible flow in a specified range of angles of attack

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Abstract

A problem of modification of the classical airfoils that ensure the absence of separation in a subsonic ideal-gas flow in a specified range of angles of attack is solved by a numerical-analytical method based on the quasi-solution of inverse boundary-value problems of aerohydrodynamics and Kármán-Jiang formulas. Loitsyanskii's criterion of the non-separated flow is used to determine the boundary-layer separation point. © MAIK/Nauka 2008.

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Keywords

Allowance for compressibility, Inverse boundary-layer problem of aerohydrodynamics, Method of quasi-solutions, Non-separated flow